Expanding GIS: Creating a GIS program for Local Agencies

Debbie Briedwell

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

Local Public Health Agencies

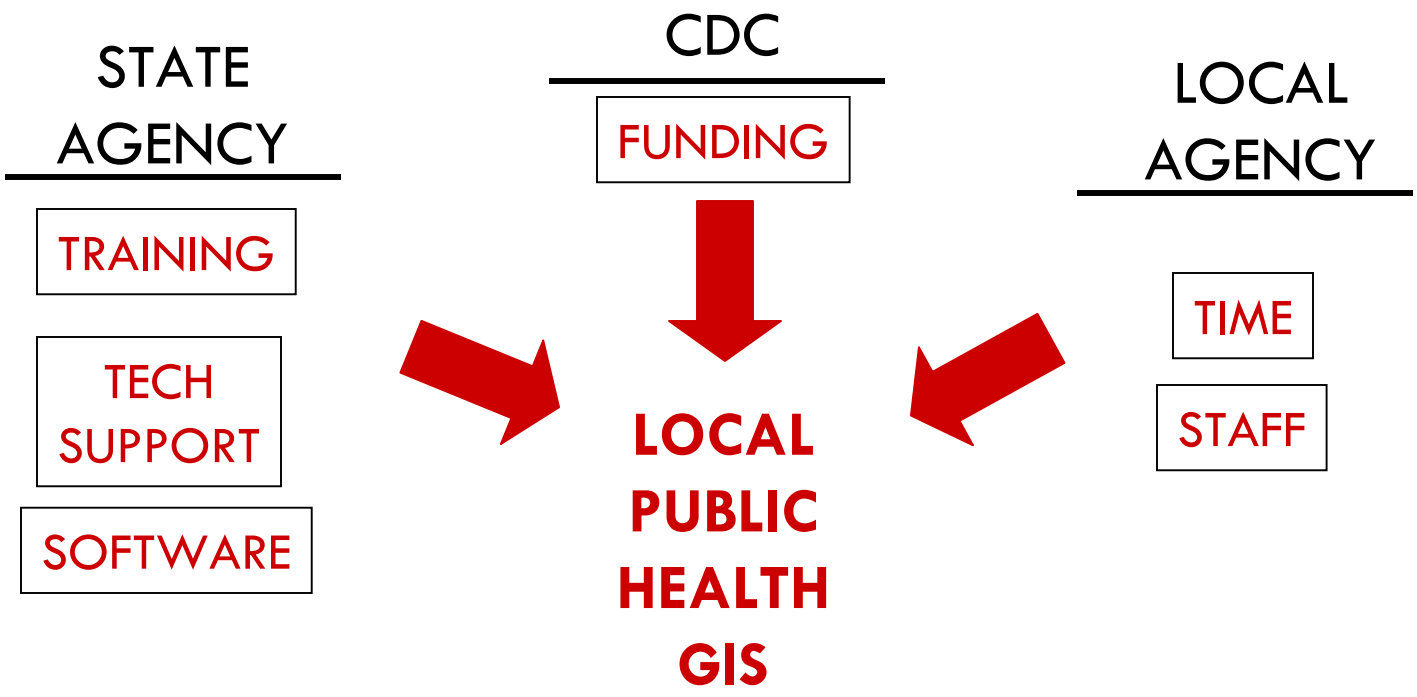
- 114 LPHAs in Missouri
- Governed by elected boards, county commissions or city councils
- Vary in size, staffing & resources
- Connected to State through contracts

GIS Use - Missouri Public Health

- DHSS hired first GIS position in 2001
- 3 more positions created through CDC's Bioterrorism grant in 2002
- GIS training and support program in place for all DHSS GIS users.
- Few LPHAs have GIS capabilities

Local GIS Program

Utilize existing GIS resources at State level to assist local agencies.



Funding

CDC Bioterrorism Grant

Increased local and state public health infrastructure with:

- GIS capacity to map data
- Ongoing support for GIS staff and training
- Maintain ongoing support for GIS staff and training

Benefits to LPHA

Each participating LPHA receives:

- Access to 1 license of ArcView GIS software
- Ongoing GIS training
- Statewide spatial databases
- GIS application support
- On-site emergency GIS support if available.

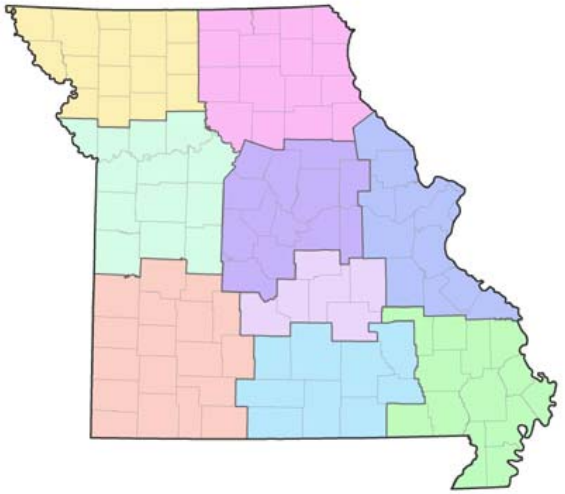
LPHA Expectations

- Appoint one employee to participate
- Utilize GIS for various projects at local office.
- Complete monthly GIS exercises.
- Participate in additional DHSS GIS training and field drills when possible.
- Provide GIS expertise for county's area of responsibility for health emergency preparedness, response, and recovery

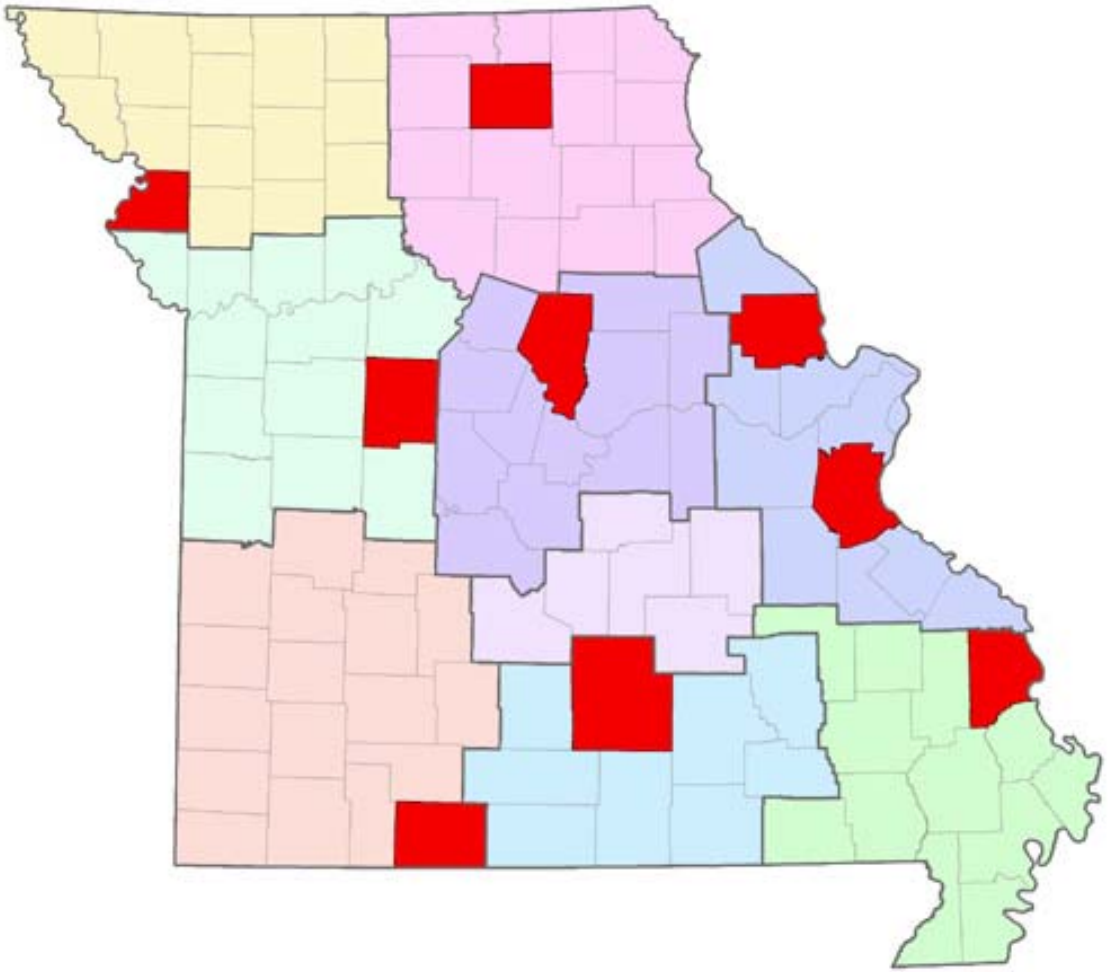
SELECTION PROCESS

Agency Selection

- Seminars were held across the state to educate Local health workers about GIS.
- Applications taken for interested agencies.
- Agencies selected from applications.
  - Location in Emergency Response District
  - Availability of Resources

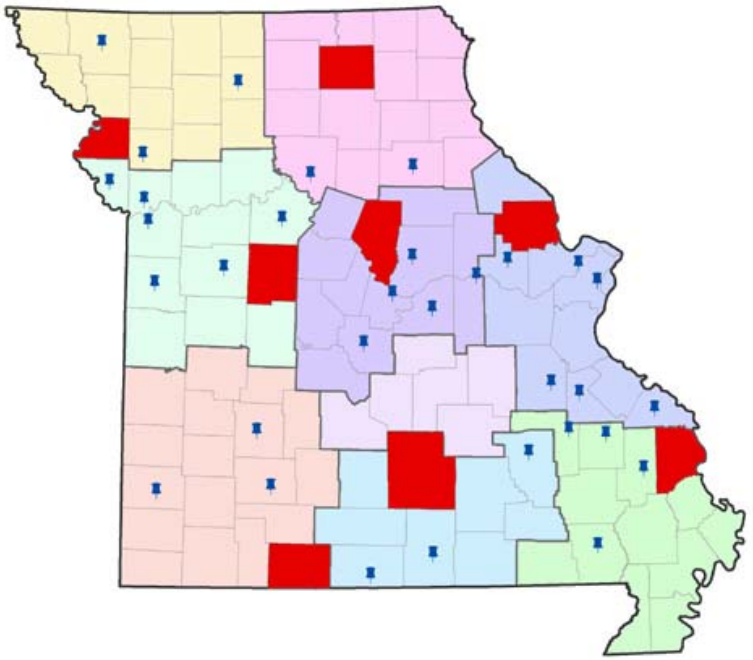


2003 Participating Agencies

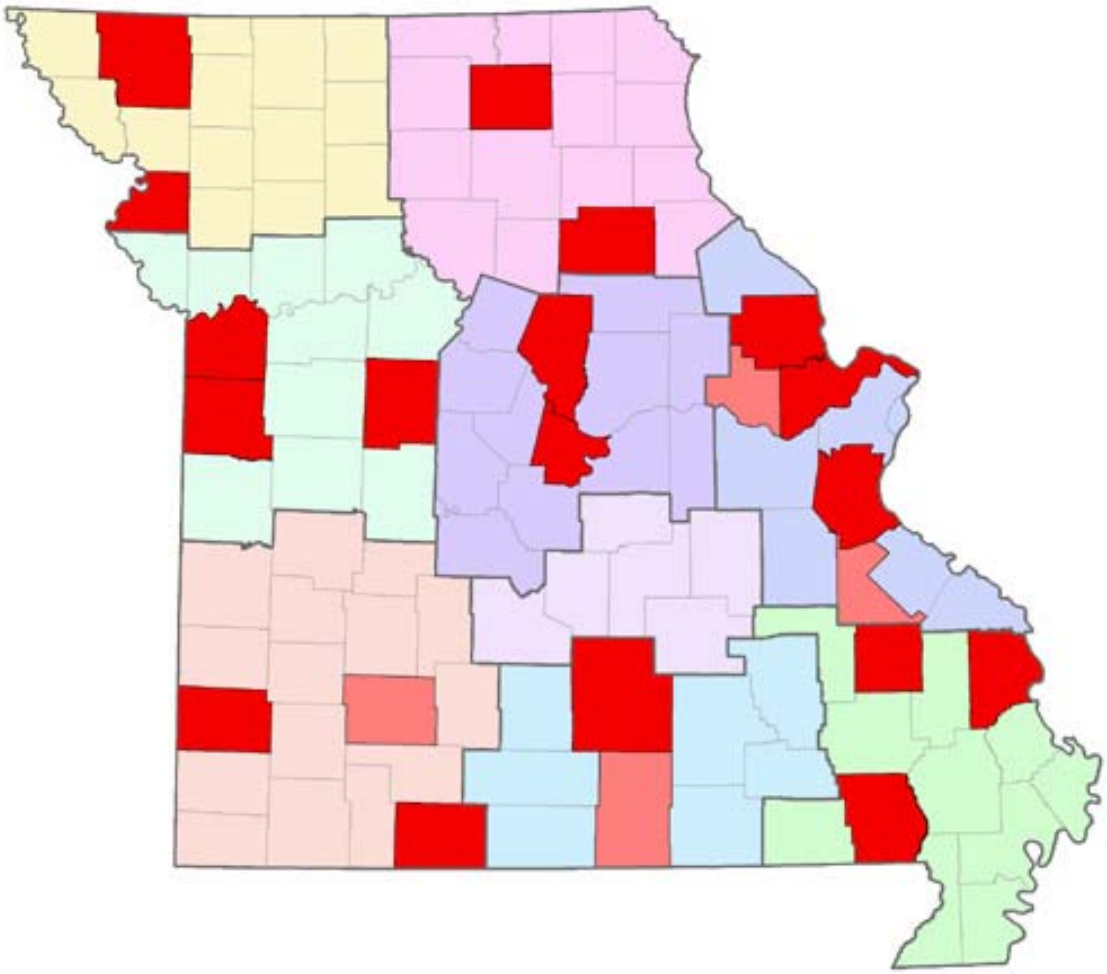


2004 Agency Selection

- Expanded applicant search
- More agencies aware of GIS
- 32 agencies applied
- Required written statement on how the agency could benefit from GIS



2004 Participating Agencies



TRAINING

Introductory Training

Training at ESRI in St. Charles, MO

- Introduction to GIS I – 2 days
- Introduction to GIS II – 3 days

- All costs covered by DHSS

3-Day Training

Introduction to GIS in Public Health:

- Basic GIS concepts
- Public Health specific exercises
- Utilize Missouri data

3-Day Training

Local BT GIS :

- Additional GIS skills
- Public Health Event Scenarios
  - Patient resource management
  - West Nile Mosquito Spraying
  - Salmonella Epidemic
  - Restaurant Inspections
  - Radiologic Waste Accident
- GPS basics

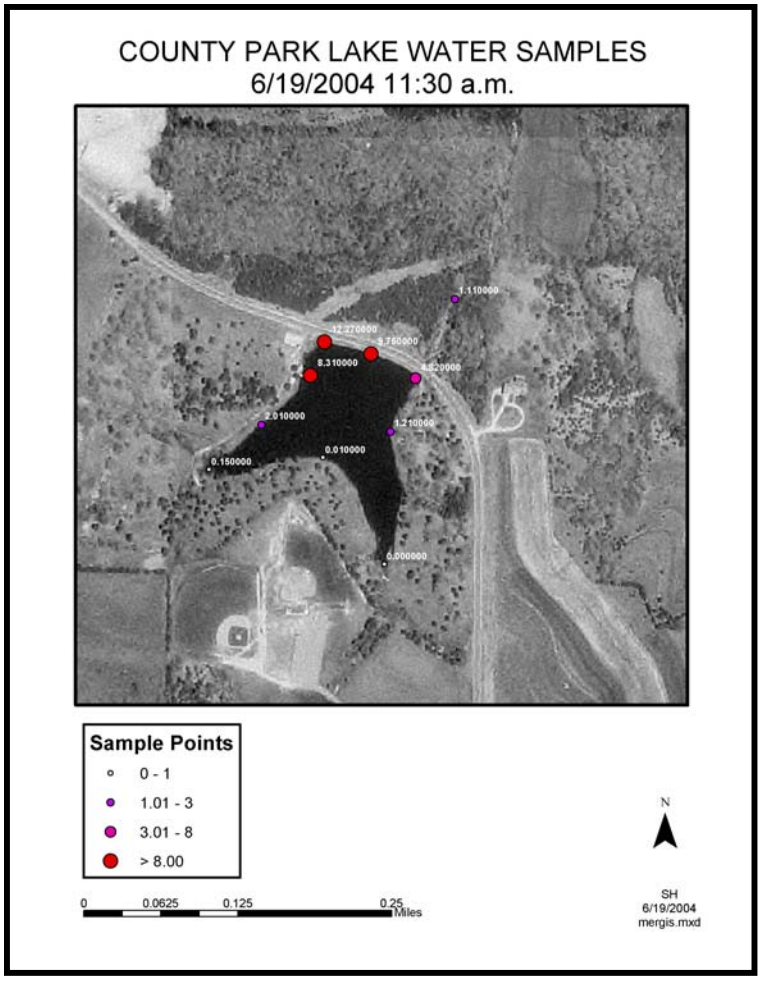
3-Day Training

Field Training :

- Outdoor Emergency Exercise
- Teams work to provide GIS/GPS support for health emergency
- Use skills learned in Day 1 & 2.

3-Day Training

- Collapsed Dam
- Contaminated water reservoir
- Toxic automobile accident



Monthly Exercises

- Short exercises designed to utilize various aspects of GIS
- Completed via email.
- Users are given a 2 week period to complete the exercise
- Increases users skills
- Increases communication between GIS Users and GIS administrators

Monthly Exercises

- General directions for proficient users

GHERM Monthly Exercise #1
Your Task:
Create a pdf document called "monthly_ex1.pdf" that contains a map of your county and the locations of the medical facilities and local public health department offices. The map should also show the cities and towns as well as major roads. The health department offices should be labeled with their office names.

If needed, follow the detailed guide below to complete the exercise.

Monthly Exercises

- Detail instructions for new users

select "More Colors". Change the numbers to R = 255, G = 255, B = 215.

The Cities and Towns are now the same color as your county. Change the fill color of the Cities and Towns so that they will be visible (fill color = mango, outline color = no color).
To do this, go to the layer properties, and change the fill color of Cities and Towns to 'Mango' and the outline to 'No Color.'

Make Local Public Health Agency offices visible.
The layer for Local Public Health Agencies is found under the "DHSS Health Offices and Districts" group. Expand the group to find the layer. Make sure that the group is visible (has the box to the left of the name checked) and that the Local Public Health Agencies layer is visible (checked). If the box is checked, but gray, this means that the layer is on, but the map view is not in the set visible scale range. To change this, right-click on the layer, and go to "Visible Scale Range" and then select "Clear Scale Range."

If your symbols are still not visible, they could be covered by a polygon layer (such as "Cities and Towns"). Turn off the "Political Boundary" group by unchecking the box in

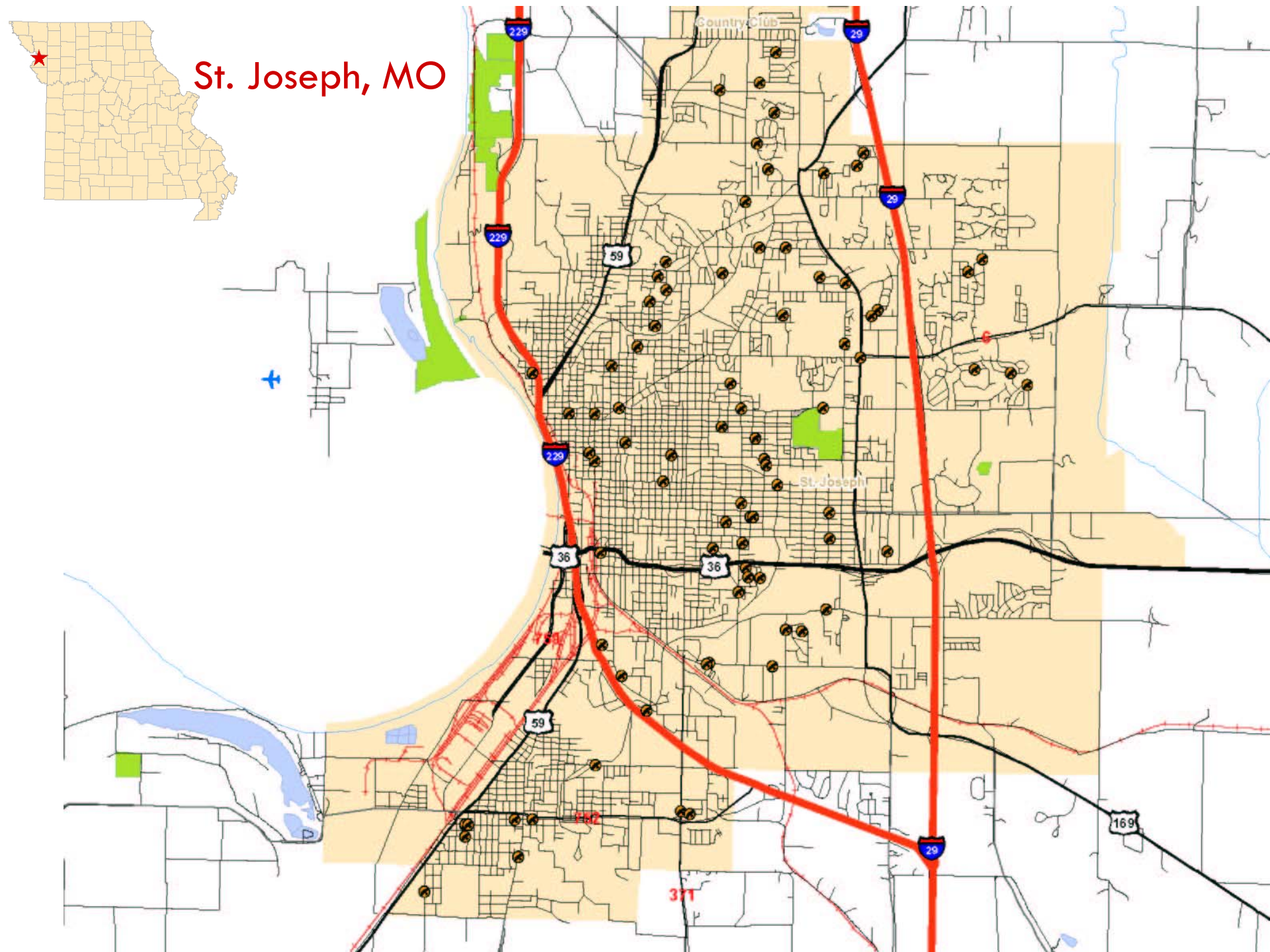
Additional Training

- Advanced GIS courses
  - Symbology
  - Geocoding
  - Statistical Methods in GIS
- Field Exercises
  - Local Emergency Response Drills
  - GIS-specific drills

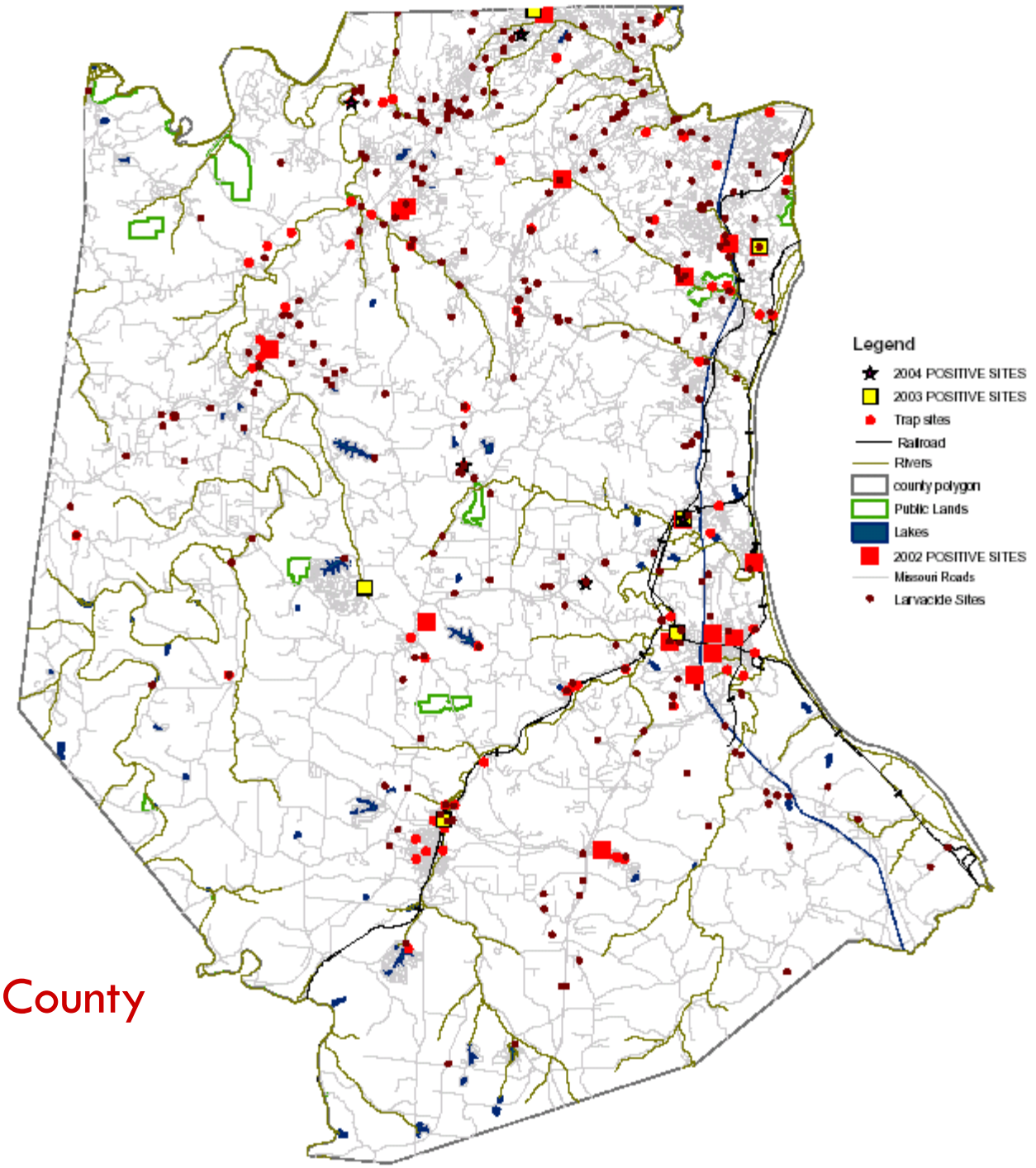
LOCAL GIS APPLICATIONS

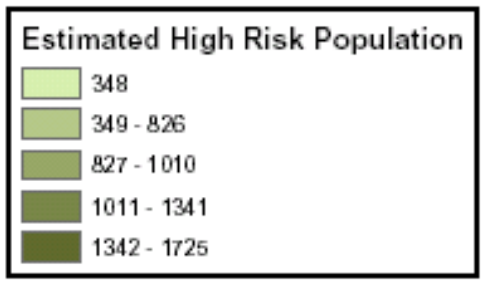
GIS Use at Local Level

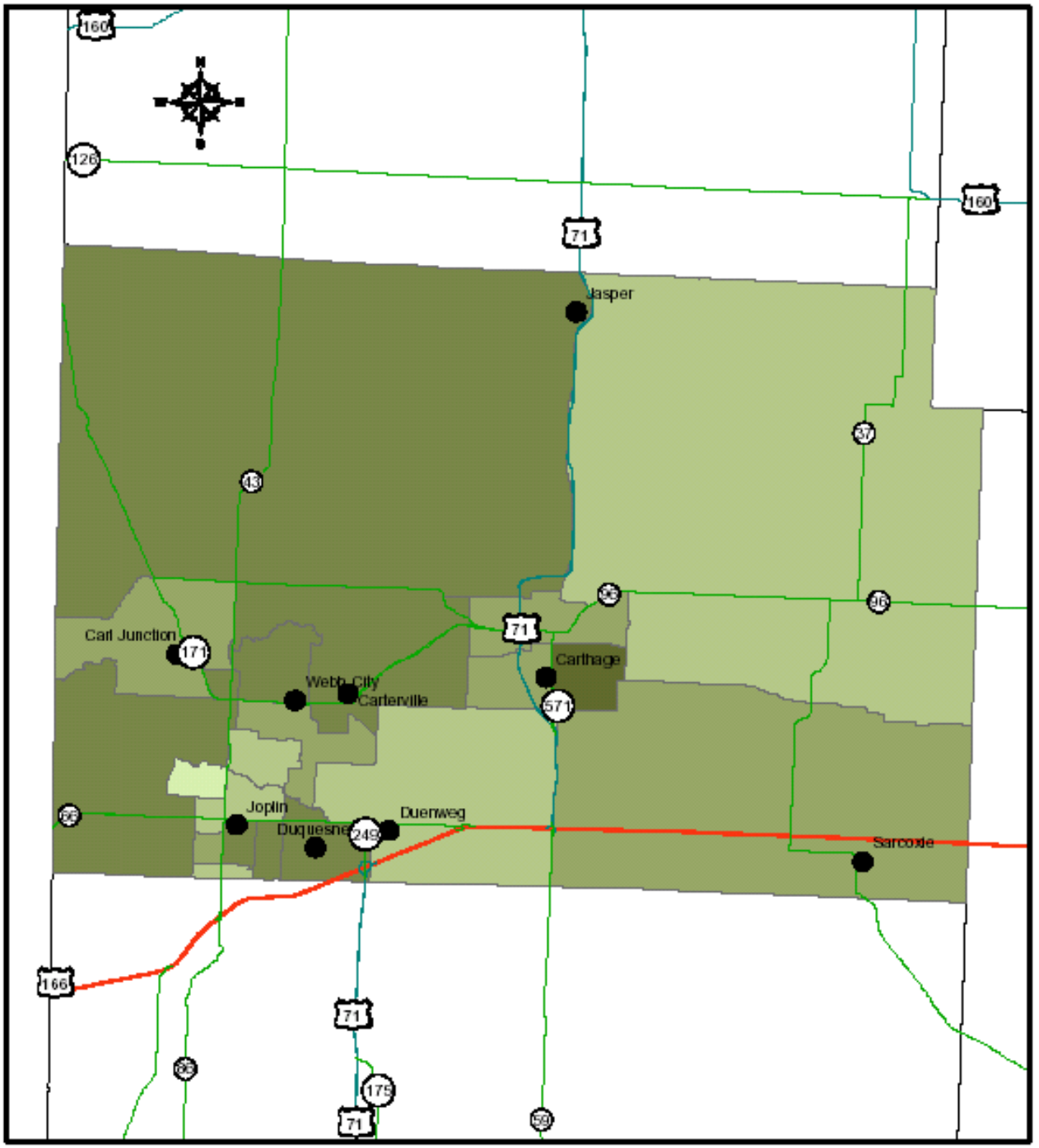
- Disease surveillance
- Resource Management
- Inspections
- Environmental Health
- Emergency Response

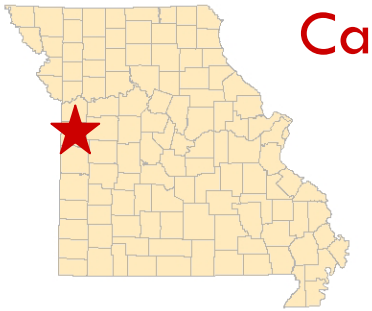

St. Joseph, MO
Country Club
St. Joseph
229
29
59
36
169
371

Jefferson County



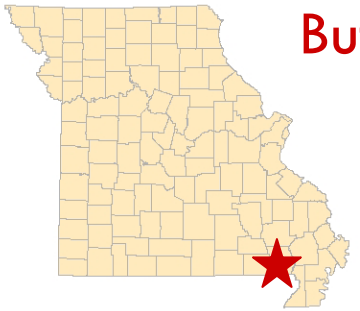

Estimated High Risk Population
348
349 - 826
827 - 1010
1011 - 1341
1342 - 1725


160
126
71
Jasper
37
43
96
Carl Junction
171
Webb City
Carterville
Carthage
571
Joplin
Duenweg
Duquesne
249
Sarcoxie
166
71
86
175
71
59

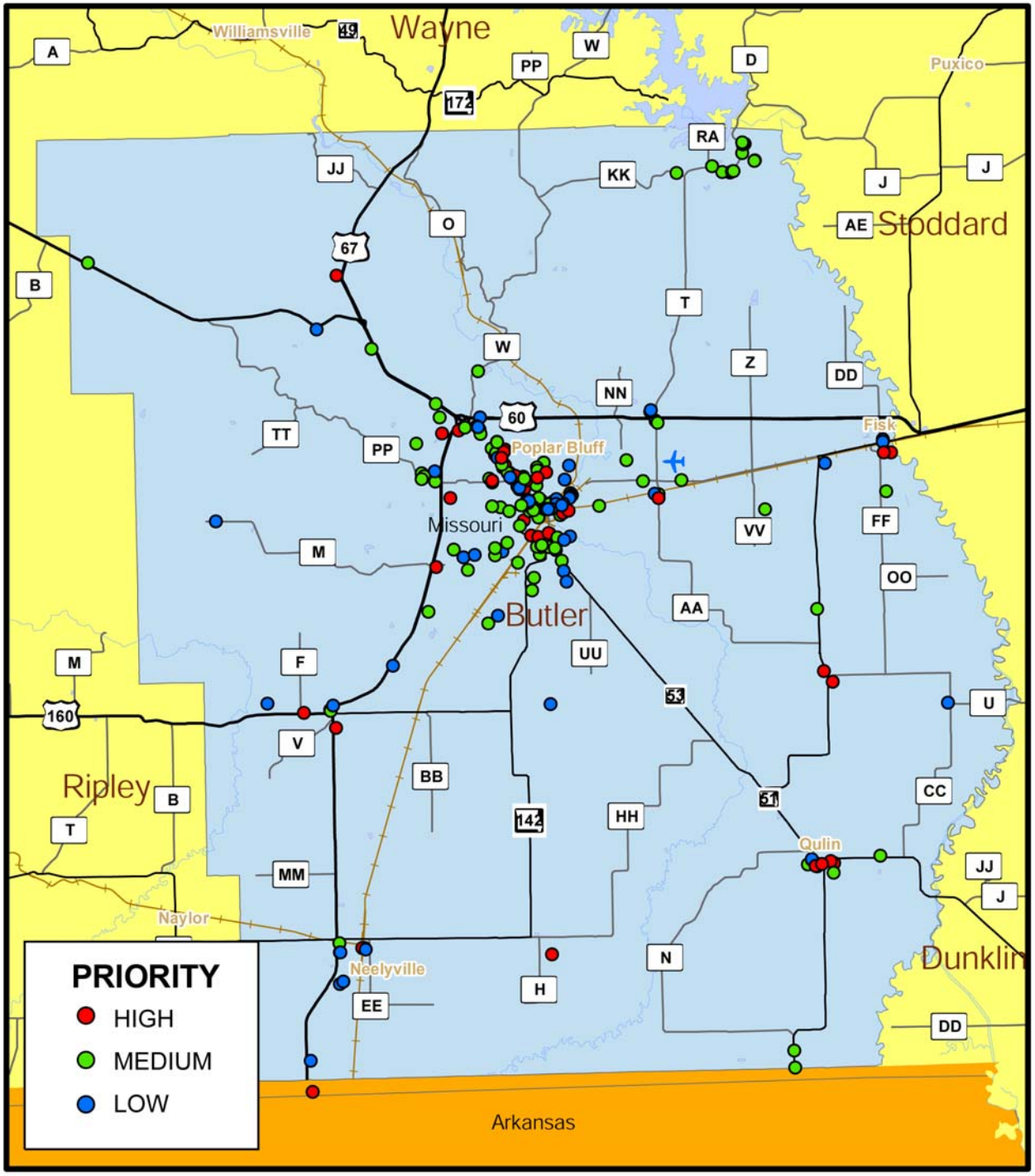


Cass County

Restaurant Inspections

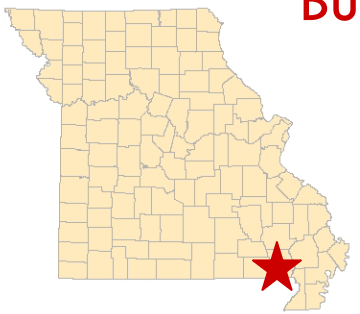


Butler County

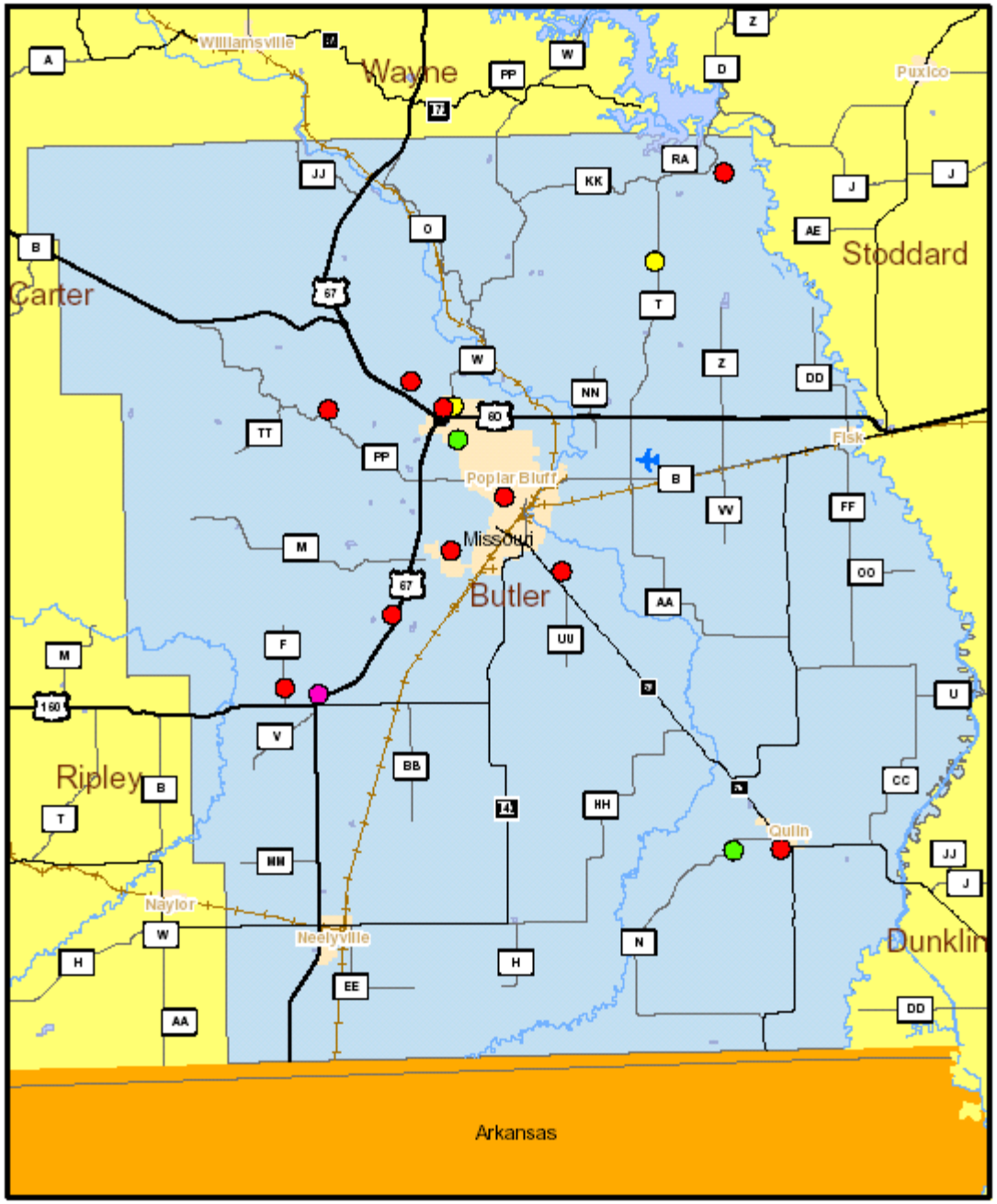


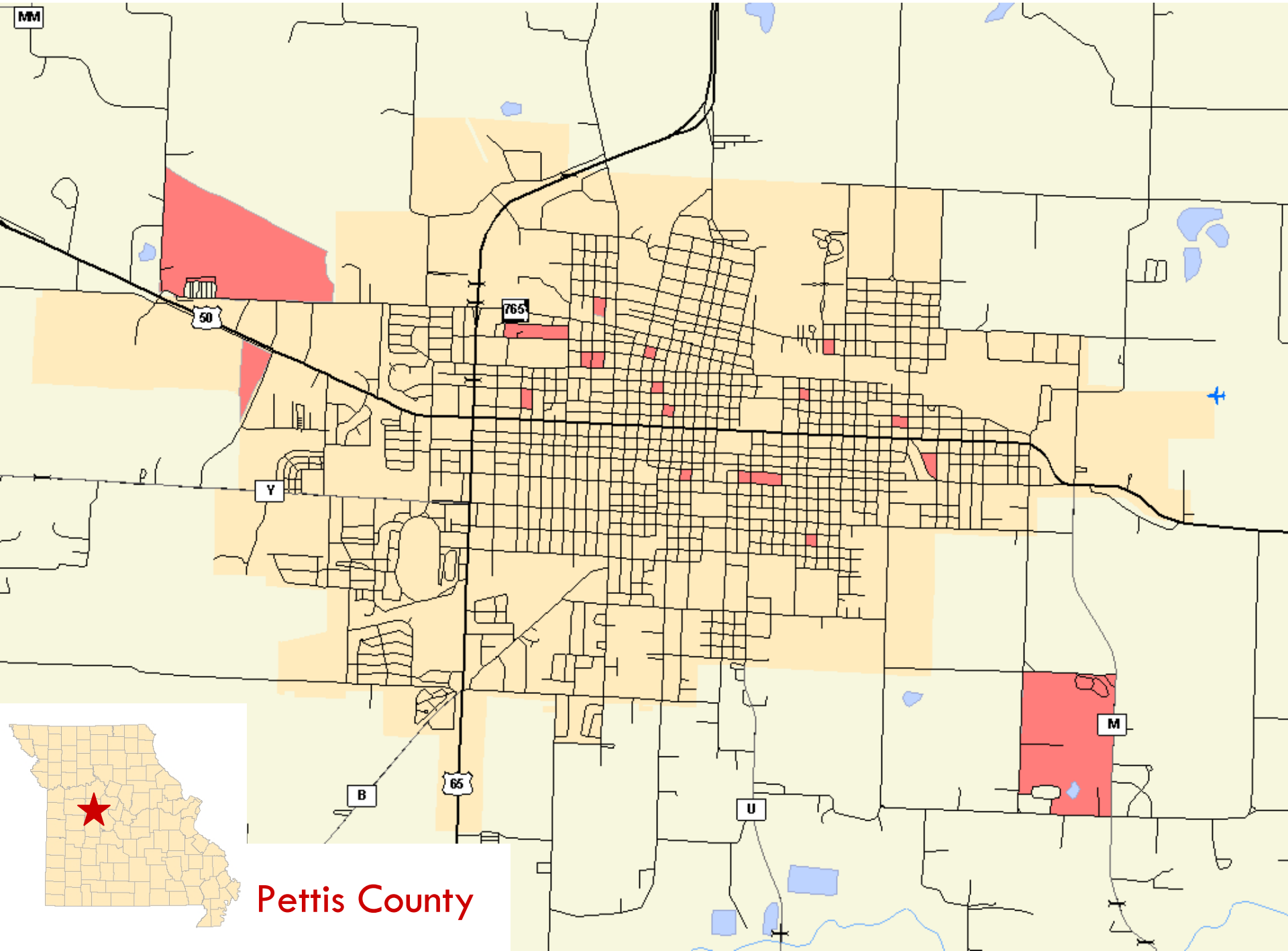
Sewage Complaints for Butler County in 2004

- Violation Notice Issued
- Violation in Progess
- Violation Resolved
- Unfounded



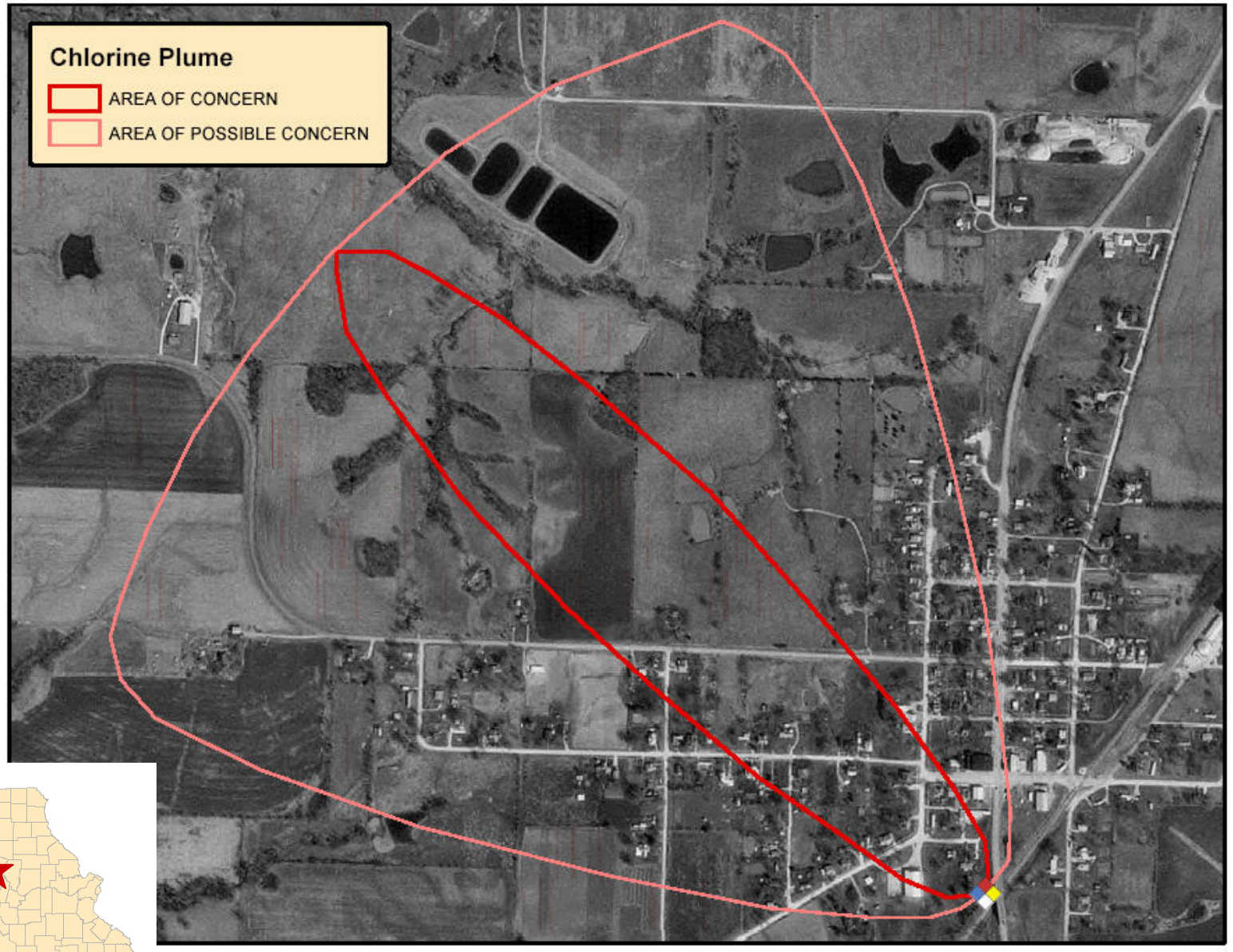
Butler County




MM
50
765
Y
B
65
U
M
Pettis County

Chlorine Plume Scenario

Armstrong, Missouri



Howard County

* Map for Drill Use Only *

N

DKB
OoS
armstrong_aerial.mxd
02/13/2004

Challenges

- Local
  - Limited staff
  - Time to learn and use software
  - Learning curve
- State
  - Making GIS a priority
  - Communication

Benefits

- Allows local interests to be explored that might not have high priority at state level.
- Utilizes state resources and technical assistance.
- Improve communication and coordination between state and local government.
- Work together toward a common goal to positively impact public health.

Now What?

- Continue GIS support & training
- Add more LPHAs to program
- Evaluate GIS uses in program LPHAs
- Environmental Grant
  - Expand training topics
  - GPS training
  - Develop environmental spatial database

Questions?